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10/588,193	08/02/2006	Patrick Glockner	293371US0PCT	6756
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
PAUL, JESSICA MARIE				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/588,193

Applicant(s)

GLOCKNER ET AL.

Examiner

Jessica Paul

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 7/17/08, 12/19/07, 8/2/07, 5/21/07, and 11/27/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112/101

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-33 provide for the use of a radiation curable resin, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

3. Claims 2-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 2 of the instant application, the applicant claims a "radiation-curable resin obtained by polymer-analogously reacting at least one of components A, B, with C," wherein applicant fails to disclose what is meant by the phrase "polymer-analogously reacting."

4. Upon reviewing previous works by the same inventive entity, US Patent No. 7329710 discloses that the phrase "polymer-analogous reaction" means that a polymer is further reacted either to add functional groups or to block or protect functional groups (col2, line63). The examiner takes the position that the definition listed above is an incorporated accurate portrayal of what is required by the instant application, and is herein for further purpose of examination.

5. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 requires nonhydrogenated phenol-aldehyde resins are used to a minor extent. The applicant fails to specify what is meant by "minor extent."

6. Claims 1-33 provides for the use of a radiation-curable resin, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

7. Claims 1-33 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

8. The examiner takes note that the specification does not teach the steps of using the polymer, but the polymer capable of being used, and therefore the claims are treated as a composition for reasons of further examination.

Claim Rejections - 35 USC § 103

9. Claims 1-3, 5, 7-15, 17, 19-21, 28, 29 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fink et al. (US Serial No 2004/0167262) and in view of Lange (US Patent No 5962582).
10. Regarding claim 1, 7-15, 17, 19-21, 28, 29, 32, and 33; Fink et al. teaches an adhesive composition [0001-0011] comprising a polyacrylate [0012], a photoinitiator [0021], carboxylic acids, such maleic and methacrylic acids [0035], and an antioxidant containing at least one aromatic hydroxyl group [0047]. Fink et al. also discloses further monomers may be added to the polyacrylate include glycidyl methacrylate [0037] as well as additives such as plasticizers or stabilizers [0069]. The polyacrylate as taught by Fink et al. reads on applicants claim to a compound comprising at least one ethylenically unsaturated moiety. Fink et al. discloses Ralox BHT to be an antioxidant of a preferred embodiment [0050], and applicants disclose the same product (Ralox BHT) as a preferred ring-hydrogenated phenol-aldehyde used in the instant application, therefore the antioxidant reads on applicants claim to a ring-hydrogenated phenol-aldehyde resin. Fink et al. fails to teach a carbonyl-hydrogenated ketone-aldehyde resin.
11. Lange teaches a hydrophilic, yet hydrolytically-stable synthetic resin, intended in particular for aqueous systems, which is obtained by reacting a hydroxyl-functional ketone, ketone/aldehyde, and/or a hydrogenated product of the synthetic resin, with a polycarboxylic acid, and/or a polycarboxylic anhydride (col2, line25-38). In a preferred

embodiment, Lange discloses Kunstharz SK, an acetophenone/formaldehyde synthetic resin hydrogenated (ex2, col5, line41-43); applicant discloses Kunstharz SK as a preferred example of the carbonyl-hydrogenated ketone phenol-aldehyde resin, and therefore the hydrogenated product of the ketone/aldehyde resin as taught by Lange reads on the carbonyl-hydrogenated ketone phenol-aldehyde resin as disclosed by the applicant. Fink et al. and Lange are analogous because they are both concerned with the same field of endeavor, namely coatings, adhesives, and/or compositions that improve adhesion. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the composition of Fink et al. with the carbonyl-hydrogenated ketone-aldehyde resin as taught by Lange and would have been motivated to do so in order to produce a useful hydrophilic synthetic resin with increased stability, as suggested by Fink et al. [0008].

12. Regarding claims 2; Fink et al. teaches a composition comprising a polyacrylate [0012], a photoinitiator [0021], carboxylic acids, such maleic acid [0035], and an antioxidant containing at least one aromatic hydroxyl group [0047]. The polyacrylate as taught by Fink et al. reads on applicants claim to a compound comprising at least one ethylenically unsaturated moiety and the antioxidant reads on applicants claim to a ring-hydrogenated phenol-aldehyde resin. Fink et al. fails to teach a carbonyl-hydrogenated ketone-aldehyde resin and a radiation-curable resin obtained by polymer-analogously reacting a carbonyl-hydrogenated ketone-aldehyde resin, and a ring-hydrogenated phenol-aldehyde resin, with at least one compound comprising at least one ethylenically unsaturated moiety.

13. Lange teaches a hydrophilic, yet hydrolytically-stable synthetic resin, intended in particular for aqueous systems, which is obtained by reacting a hydroxyl-functional ketone, ketone/aldehyde, and/or a hydrogenated product of the synthetic resin, with a polycarboxylic acid, and/or a polycarboxylic anhydride (col2, line25-38). The hydrogenated product of the ketone/aldehyde resin as taught by Lange reads on the carbonyl-hydrogenated ketone phenol-aldehyde resin as disclosed by the applicant. Lange also teaches that all the reactants can be combined in full at the beginning of the reaction, or else can be metered into the reactor separately during the reaction (col4, line9-11). This process reads on applicants claim to polymer-analogously reacting the reactants required by the instant application. Fink et al. and Lange are analogous because they are both concerned with the same field of endeavor, namely coatings, adhesives, and/or compositions that improve adhesion. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the composition of Fink et al. with the carbonyl-hydrogenated ketone-aldehyde resin as taught by Lange and would have been motivated to do so in order to produce a useful hydrophilic synthetic resin with increased stability, as suggested by Fink et al. [0008].

14. Regarding claims 3 and 5, the disclosure of Fink et al. and Lange are adequately set forth in paragraphs 10-12 and are herein incorporated by the references. Lange teaches that the starting resins can be mixtures of different types of resins (col4, line5-9). Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention to employ a mixture of the disclosed hydroxyl-functional resins as taught

by Lange with motives to provide a composition with improved adhesion as suggested by Fink et al. [0038].

15. Regarding claim 29: the disclosure of Fink et al. and Lange are adequately set forth in paragraphs 10-12 and are herein incorporated by the references. The composition as taught by Fink et al. in view of Lange is capable of functioning in the same capacity as that of the composition of the instant application. Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use the composition as taught by Fink et al. in view of Lange, as a substitute for metals, plastics, wood, paper, textiles, glass, and mineral substrates as required by the applicant and would be motivated to do so in order to produce a substitute with increased hardness and scratch resistance.

1. Claims 4, 6, and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Fink et al. (US Serial No 2004/0167262) in view of Lange (US Patent No 5962582) as applied to claim 1-3, 5, 7-15, 17, 19-21, 28, and 32-33 above, and further in view of Hobisch et al. (US Patent No. 6316539).

2. The disclosure of Fink et al. in view of Lange is adequately set forth in paragraphs 9-13 above and are herein incorporated by the reference. Fink et al. and Lange fail to teach specific hydroxy-functionalized polymers, said hydroxy-functionalized polymers comprising suitable di- and/or triisocyanates, and specific diisocyanates.

3. Hobisch et al. discloses water-dilutable, obtainable by converting aldehyde or ketone resins A, with multifunctional isocyanates B, specific isocyanates include HDI,

TDI, IPDI, and HMDI (col3, line44-col4, line7), aliphatic acids C, each with at least one acid group, and an aliphatic polyether D (col1, line65-col2, line16). Fink et al., Lange, and Hobisch are analogous because they are both concerned with the same field of endeavor, namely coatings, adhesives, and pigment pastes. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the composition of Fink et al. in view of Lange with the aliphatic polyether and specified multifunctional isocyanates as taught by Hobisch et al. and would have been motivated to do so in order to produce a useful synthetic resin with increased hydrophilicity.

4. Claims 22, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fink et al. (US Serial No 2004/0167262) in view of Lange (US Patent No 5962582) as applied to claim1-3, 5, 7-15, 17, 19-21, 28, and 32-33 above and further in view of Prantl et al. (US Patent No. 6096797).

5. The disclosure of Fink et al. in view of Lange is adequately set forth in paragraphs 9-13 above and are herein incorporated by the reference. Fink et al. and Lange fail to teach the ethylenically unsaturated moiety having specific isocyanates which possess an ethylenically unsaturated moiety, reaction products of hydroxyalkyl (meth)acrylates, and reaction products in a molar ratio of 1:1 of hydroxyethyl acrylate and/or hydroxyethyl methacrylate with isophorone diisocyanate and/or HMDI and/or HDI.

6. Prantl et al. discloses a mixture comprising a condensation resin (A) constructed from urea or urea derivatives (a_1) and ketones or aldehydes (a_2) selected from acidic

CH aldehydes or ketones and their mixtures with formaldehyde, and a radiation curable compound (B) having at least 2 acryloyl or methacryloyl groups (col1, line5-line12). The radiation curable compound (B) can be an epoxy or urethane (meth)acrylate. Urethane (meth)acrylates are especially the reaction products of hydroxyalkyl (meth)acrylates with poly- or diisocyanates. Prantl et al. discloses the possibility to use mixtures of different compounds (B), including especially mixtures of (meth)acryloyl compounds (col3, line56-col4, line5). However, Prantl et al. does not teach the 1:1 molar ratio of hydroxyethyl methacrylate and the poly- or diisocyanate. The experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. See *In re Aller*, 105 USPQ 233. Fink et al., Lange, and Prantl et al. are analogous because they are both concerned with the same field of endeavor, namely coatings, adhesives, and inks. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the composition of Fink et al. in view of Lange with the urethane (meth)acrylates as taught by Prantl et al. and would have been motivated to do so in order to produce a useful synthetic hydrophilic.

Double Patenting

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

15. Claims 1-6, 7-11, 13-18, 20-27, and 30-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 5-14, 19, 27-33, 35, 37-44, 49, 54, 57-59, 61, and 63 of U.S. Patent No. 7199166.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to the same art specific subject matter. Both applications are directed to a radiation-curable resin, (A) comprising a carbonyl-hydrogenated ketone-aldehyde resin, a (B) ring-hydrogenated phenol-aldehyde resin, and (C) methacrylic acid. The methacrylic acid reads on applicants claim to a compound comprising at least one ethylenically unsaturated moiety having at least one moiety which is reactive towards (A) and/or (B) as required in claim 1 of the instant application.

16. Regarding claim 2 of the instant application, applicant requires a radiation-curable resin obtained by polymer-analogously reaction at least one of (A) a carbonyl-hydrogenated ketone-aldehyde resin, and (B) a ring-hydrogenated phenol-aldehyde resin with (C) at least one compound comprising at least one ethylenically unsaturated

moiety and at least one moiety which is reactive toward (A) and/or (B). US Patent No. 7199166 claims a process for preparing a radiation-curable resin, comprising: reacting (a) at least one base resin selected from the group consisting of a carbonyl-hydrogenated ketone-aldehyde resin and a ring-hydrogenated phenol-aldehyde resin with (b) methacrylic acid and/or a derivative thereof containing a functional group reactive with the base resin (col12, line37-44, clm54). US Patent No. 7199166 further claims the process as claimed in claim 54, wherein the methacrylic acid and/or a derivative containing a functional group reactive with the base resin is added to a solution or melt Of at least one of the ketone-aldehyde resin or the phenol-aldehyde resin, and further a hydroxy-functional polymer (col12, line50-60, clm57-58). In the instance that the methacrylic acid is added to the carbonyl-hydrogenated ketone-aldehyde resin and the ring-hydrogenate phenol-aldehyde resin, claims 54 and 57-59 of US Patent No. 7199166 reads on applicant's claims 2, 3, 5, and 6, and what applicants claim as a polymer-analogous reaction.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Paul whose telephone number is (571)270-5453. The examiner can normally be reached on Monday thru Friday 8:00- 6:00p; alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica Paul
Examiner
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/JMP/

/Sanza L McClendon/

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